

OVERLAYING WITH COPPER BY THE AMERICAN ABORIGINES.

By OTIS T. MASON,

Curator of the Department of Ethnology

IN a recent paper* Prof. F. W. Putnam gives an account, with figures, of several objects made of wood and covered with copper. In a later report† is an account of copper objects sheathed with silver, a pendant of copper sheathed with gold, ear ornaments of copper sheathed with silver and meteoric iron, and bracelets of copper sheathed with silver. Since that time Prof. Putnam has found many other specimens from Ohio, and calls attention to Atwater's statement, in *Archæologia Americana*, describing objects as being overlaid with silver.

Numerous specimens have been discovered by others, notably by Mr. Warren K. Moorehead, in his explorations of mounds near Chillicothe, Ohio. These examples are quite sufficient to show that the American aborigines in the Mississippi valley and in South America had the art of cold-hammering copper, of beating it to overlie and fit upon a warped or curved surface, and of turning the edges under.

This process must not be confounded with the mere hammering out of implements, nor with that other process of making a sheet of copper as thin and uniform as a ship's sheathing and then producing figures by rubbing or pressure. Some doubt had been expressed concerning the genuineness of such work, but Mr. Cushing's late experiments‡ change the status of the problem. But of the overlaying and turning under there can be no reasonable doubt. It is entirely within the compass of tools known to have been used. That there might be no mistake about this, Mr. Joseph D. McGuire has hammered out a nugget of Lake Superior copper into a sheet as thin as the one figured, and by grinding the surface with common sand has removed all marks of the stone hammer and stone anvil. These experiments were conducted in the National Museum by the simplest processes. No attempts were made to do the overlaying. This is to be regretted, as the warping of the sheet so as to lie close to the uneven surface must have required great skill.

* Report of the Peabody Museum, Cambridge, Mass., 1881.

† *Op. cit.*, 1883, p. 171.

‡ *Am. Anthropologist*, I, 1894.

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To compare with the overlaying of wood and bone by sheet copper, discovered in the mounds and described by Putnam, the U. S. National Museum has received from Lieut. G. T. Emmons, U. S. Navy., two figures of humming birds in wood, well carved and painted red. Illustrations of these are given below. Each wing and the tail of each bird is overlaid with a covering of sheet copper, pressed down to fit and turned under at the margins so as to be held fast. The surfaces are adorned with the conventional wing and eye signs of the Haidas. Especial attention is called to the carving on the copper. The furrows and ridges are all cut with steel tools. The effects are produced by first making a narrow, deep furrow and then scraping the metal away from one edge.

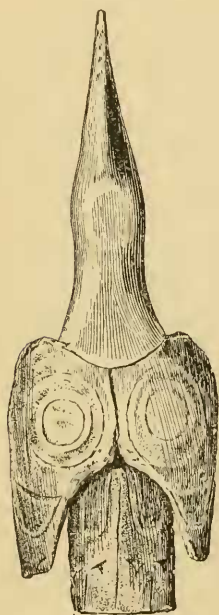


Fig. 1.

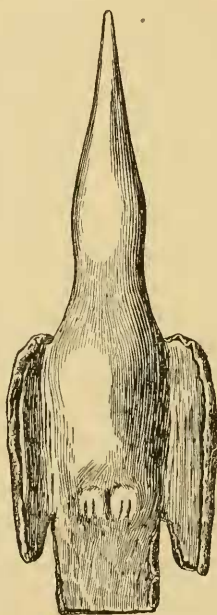


Fig. 2.



Fig. 3.

BIRDS OF WOOD, WITH WINGS AND TAIL OVERLAID WITH COPPER.

Metal working by the American aborigines.

The author does not remember whether any engraving appears on the Ohio mound specimens. Such as the Haidas and the Tlingets now make with jewelers' tools would have been above and beyond the ability of the aboriginal metallurgists of the Mississippi valley.

Figure 1 shows the first example of a bird (No. 165,677, U.S.N.M.) neatly carved from wood. The work has been very cleverly done, and the specimen gives evidence of having been used for a long time. The tail and each wing are separately overlaid with a sheet of copper, closely fitting. The ornamentation upon the surfaces are the abbreviated symbols for eyes and wings. Figure 2 represents the under side

of the same object and exhibits more graphically the manner in which the edges of the copper plates are thinned out and turned under all round to prevent their falling off:

Figure 3 shows the second bird with one wing cover removed. Here is to be observed the careful manner in which the upper surface of the wing was carved to shape and smoothed down. The copper plate is warped so as to lie in contact with this surface at every point. The removal of the plate and the examination of the reverse side, shown in figure 4, reveal the metallurgic processes employed. It will be seen that neither punch nor severe pressure produced the marks on the outer surface. The marks on both examples were cut with metal tools. These specimens have both been examined by a skillful engraver and they have given evidence of having been cut and scraped as indicated above.



Fig. 4.

COPPER WING
COVER.